CAMBRIDGE
International Education

Cambridge IGCSE™

GEOGRAPHY **0460/43**

Paper 4 Alternative to Coursework **October/November 2024**

MARK SCHEME

Maximum Mark: 60

Published

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

Cambridge International will not enter into discussions about these mark schemes.

Cambridge International is publishing the mark schemes for the October/November 2024 series for most Cambridge IGCSE, Cambridge International A and AS Level components, and some Cambridge O Level components.

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Generic Marking Principles

These general marking principles must be applied by all examiners when marking candidate answers. They should be applied alongside the specific content of the mark scheme or generic level descriptions for a question. Each question paper and mark scheme will also comply with these marking principles.

GENERIC MARKING PRINCIPLE 1:

Marks must be awarded in line with:

- the specific content of the mark scheme or the generic level descriptors for the question
- the specific skills defined in the mark scheme or in the generic level descriptors for the question
- the standard of response required by a candidate as exemplified by the standardisation scripts.

GENERIC MARKING PRINCIPLE 2:

Marks awarded are always **whole marks** (not half marks, or other fractions).

GENERIC MARKING PRINCIPLE 3:

Marks must be awarded **positively**:

- marks are awarded for correct/valid answers, as defined in the mark scheme. However, credit is given for valid answers which go beyond the scope of the syllabus and mark scheme, referring to your Team Leader as appropriate
- marks are awarded when candidates clearly demonstrate what they know and can do
- marks are not deducted for errors
- marks are not deducted for omissions
- answers should only be judged on the quality of spelling, punctuation and grammar when these features are specifically assessed by the question as indicated by the mark scheme. The meaning, however, should be unambiguous.

GENERIC MARKING PRINCIPLE 4:

Rules must be applied consistently, e.g. in situations where candidates have not followed instructions or in the application of generic level descriptors.

GENERIC MARKING PRINCIPLE 5:

Marks should be awarded using the full range of marks defined in the mark scheme for the question (however; the use of the full mark range may be limited according to the quality of the candidate responses seen).

GENERIC MARKING PRINCIPLE 6:

Marks awarded are based solely on the requirements as defined in the mark scheme. Marks should not be awarded with grade thresholds or grade descriptors in mind.

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Marking annotations

Examiners must use the following annotations:

Annotation	Meaning
	Correct point
	Incorrect
HA	Hypothesis answer used with another annotation e.g. tick, cross or omission mark
Highlight	Used to link parts of an answer or show where credit has or has not been given
	Omission or further development/detail needed to gain credit
J	The point has 'just' been allowed/benefit of the doubt given
LNK	Linking 2 or more ideas together to gain a mark
REP	Idea has been repeated
{ }	Brackets used to show where a point has or has not been awarded within a longer answer
	1 Response has been seen but no credit given can also be used for no response 2 Additional page has been checked

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<table>
<tr><th>Question</th><th>Answer</th><th>Marks</th></tr>
<tr><td>1(a)(i)</td><td>Radial graph

1 mark</td><td>1</td></tr>
<tr><td>1(a)(ii)</td><td>Secondary data is obtained from another source collected by others/not collected by self/already exist/second hand/not first hand;
Primary data is collected by students/people doing the research/yourself/first hand/collected by fieldwork;

NOTE: Do not double credit opposites.

2 @ 1 mark</td><td>2</td></tr>
<tr><td>1(a)(iii)</td><td>80

1 mark</td><td>1</td></tr>
<tr><td>1(b)(i)</td><td>Do a practice survey/pilot study;
Complete the first survey under teacher guidance/teacher shows students how to use sheet/get help from person who created survey sheet/ask teacher;
Have clear instructions how to use sheet;
Study sheet before using it/before fieldwork;

Agree on/get an average score/most popular score;
Do a practice survey/pilot study;
One student surveys at all seven sites;
Discuss/vote on scores to give/compare scores with others;
Decide what description mean;

3 @ 1 mark</td><td>3</td></tr>
<tr><td>1(b)(ii)</td><td><table><tr><td>stones on the bed and sides of the river or lake</td><td>lightly covered in brown deposits</td></tr><tr><td>weeds growing in the water</td><td>a lot throughout the water</td></tr><tr><td>grey sewage fungus</td><td>little</td></tr><tr><td>scum/froth/oil on the water surface</td><td>a few bubbles</td></tr><tr><td>rubbish dumped in the water</td><td>a few large items</td></tr></table>
5 correctly circled = 2 marks
3 or 4 correctly circled = 1 mark
1 or 2 correctly circled = 0</td><td>2</td></tr>
<tr><td>1(b)(iii)</td><td>13
1 mark</td><td>1</td></tr>
</table>

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Question	Answer	Marks
1(b)(iv)	Site 6 1 mark	**1**
1(b)(v)	Plot score of 17 at 2.5 km from city centre 1 mark	**1**
1(b)(vi)	Hypothesis is false – 1 mark reserve; (✓HA) OR Water does not become more visually polluted as distance increases; As distance from city centre increases sites become less visually polluted/lower visual pollution; OR From site 2 to site 6 it becomes less visually polluted; OR score decreases/most polluted at site 2 & least polluted at site 6; OR highest score at site 2 and lowest score at site 6; Credit paired data from any 2 sites to show negative relationship (less visually polluted with increasing distance) e.g. Site 2/1 km from city centre = 25 and site 6/7.5 km from centre = 8; NOTE no credit if list every site. increases from site 1 to site 2; OR 1 is exception/fits the hypothesis; increases from site 6 to site 7; OR **7** is exception/fits the hypothesis; Hypothesis is true/partly true = XHA. Credit relevant evidence which supports the correct conclusion of false. If no hypothesis conclusion ^HA and credit evidence which supports the correct conclusion of false. 1(HA) + 2(S) + 1(D) or 1(HA) + 1(S) + 2(D) marks	**4**
1(c)(i)	B D C A 1 mark	**1**
1(c)(ii)	Take more than one reading (at each sampling point)/do test again/repeat test/take more than one sample; Get other students to check the reading on the meter/compare results with those of other students; Use two or more meters at each sampling point; Make sure the meter is calibrated properly/working properly/same mode/set meter to 0; Clean the probe/container/pH meter after use/make sure the probe/container/pH meter is clean; Leave the probe/in the water for a period of time/until the reading is stable/fully immerse the probe; 3 @ 1 mark	**3**
1(c)(iii)	Draw bar to 6.4 at site 3 1 mark	**1**

Question	Answer	Marks
1(c)(iv)	Hypothesis is true – 1 mark reserve (✓HA) pH score varies as main land use changes/pH higher for some land uses than others; Lowest pH/most polluted/most acidic where land use is railway/main road/manufacturing industry; Highest pH/least polluted/least acidic where land use is tertiary industry/green land; Comparison of any two land uses e.g. low-quality housing lower pH/more polluted/than high-quality housing; Compare 2 land uses above pH 7 and below pH 7 e.g. low-quality housing and high-quality housing; Credit 1 mark for paired data from 2 land uses e.g. pH = 5.9 in manufacturing area and 7.9 in tertiary industry area; Hypothesis is false/partly true = XHA. Credit relevant evidence which supports the correct conclusion of true. If no hypothesis conclusion ^HA and credit evidence which supports the correct conclusion of true. 1(HA) + 3 @ 1 mark	**4**
1(d)(i)	Channel width increases downstream; Does channel depth increase downstream? River velocity increases downstream; Does river velocity vary across the channel? River velocity increases as distance from city centre increases; 1 mark	**1**

Question	Answer	Marks
1(d)(ii)	Example 1 – method to measure channel width: One student/pole on each bank/side of river; Place measuring tape across channel/from one bank to the other; Keep tape taut/stretched; Poles must be directly across/at 90 degrees to banks; Repeat and calculate average width; Example 2 – method of measuring velocity using floats: Put poles/sticks 10metres or fixed distance along river; Use tape measure to measure distance; Put float/orange in river at start of distance; Start stopwatch/timer when float released at start point; Measure time taken for float to travel between poles; Stop stopwatch/timer when float passes end point; Repeat and calculate average speed; Example 3 – method of measuring velocity using flowmeter: Put meter/propeller/flowmeter below surface of water/into water; Propeller must face upstream; No obstacles in front of propeller/stand behind flowmeter/upstream; Read/look at digital reading/display to see speed; Repeat and calculate average speed; Example 4 – method to measure channel depth: Put tape measure across the stream/between ranging poles on bank; Measure from bank to bank/side to side; Decide on equal intervals across the stream; Put a stick/metre ruler into the water at each interval; Stick/ruler must be vertical; Stick/ruler must touch bed; Measure the wet part of the stick/ruler; Repeat and calculate the average; Example 5 – method of measuring pebble roundness downstream: Decide on sampling method – either random/systematic; Choose 10 – 20 pebbles from the river bed; Decide on the roundness of each pebble using scale; Repeat and calculate the average; 4 @ 1 mark	**4**

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Question	Answer	Marks
1(d)(ii)	Example 6 – method to measure gradient downstream: Measure a set distance/measure 5 – 10 metres; Put two poles at both ends of measured distance; OR Put two poles at top and bottom of slope/break of slope; Measure distance between two poles; Ensure poles are vertical; Rest poles on surface; Tie string to top OR same height of both poles; Hold clinometer at top/at agreed height on pole/at eye level; Sight other pole at top/same height/along string; Read angle/measure angle/record angle using clinometer; Repeat and calculate the average; NOTE no reserve mark for diagram. 2 @ 1 mark	**2**

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Question	Answer	Marks
2(a)	Average number of years studying at school; Life expectancy; 3 @ 1 mark	**2**
2(b)(i)	Agree methodology/test sampling method/how to use questionnaire e.g. ask the questions or give the person the questionnaire to answer/students know what to do; Practise questionnaire techniques/learn how to approach people/gain confidence/see if people will answer questions; Test questions/make sure questions are appropriate or relevant/see if people understand the questions/see if they need to change questions; To find any problems/won't make mistakes in real fieldwork/correct errors; To give an idea how long it will take/manage time effectively/saves time when doing real fieldwork; 2 @ 1 mark	
2(b)(ii)	They won't do it/do it in a rush/not want to do it/won't complete it/won't have time to do it/forgot to do it/too busy to do it; They will throw it away/not return it/forget to return it/lose it; They may not understand how to fill it in/may make mistakes in filling it in/need help to fill it in/cannot ask for help/they are illiterate/don't understand the language; They don't know the purpose of questionnaire; They may lie in their answers/not take it seriously/not do it properly/take it home and someone else completes it; They won't know where or who to give it back to/can't find students; Takes a long time to get answers; 3 @ I marks	**3**

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Question	Answer	Marks
2(c)	Systematic: Choose people at regular intervals/regular pattern/equal/specific intervals Every tenth/nth person (range of 4th–10th person); Avoid bias/fair test/quick method/reliable; Random: Ask anybody/next person/no pattern; Use random number tables/pick numbers out of a hat to generate order to ask people; e.g. if number 6 selected ask the 6th person; Random numbers avoid bias/quick method/fair test/reliable; Stratified: Select with a gender/age balance; Related to population structure of village/socio-economic status; Avoids bias/fair test/reliable; NOTE credit 2 marks for description (if description does not match named sampling method credit 1 mark only for description). Credit 1 mark for explanation of why it is a good method. 1(E) + 2(D) marks	**3**
2(d)(i)	Plot 'overcrowded living conditions' results: Rank 3 = 13, rank 4 = 32, rank 5 = 46; Credit 2 marks for dividing lines at 22 and 54. 1 mark for correct shading. NOTE if plotted in wrong order credit 1 mark for lines. 3 @ 1 mark	**3**
2(d)(ii)	Hypothesis is false – 1 mark reserve; (✓HA) The main cause is malnutrition; Inadequate sanitation is higher ranked/higher percentage than lack of health care; Malnutrition and inadequate sanitation are ranked higher than lack of health care; Lack of healthcare is 3rd; Credit paired data; (1 mark reserve) Malnutrition = 41 people/% and lack of healthcare = 13 people/%; OR Inadequate sanitation = 34 people/% and lack of healthcare = 13 people/%; Hypothesis is true/partly true = XHA. Credit relevant evidence which supports the correct conclusion of true. If no hypothesis conclusion ^HA and credit evidence which supports the correct conclusion of false. 1(HA) +1(S) + 1(D) marks	**3**

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Question	Answer	Marks
2(e)(i)	Pie graph completion for village without a library; Plot 'rarely' = 26 % and 'never' = 34%; 1 mark for dividing line at 66% (238º or 122 from N) 1 mark for shading	**2**
2(e)(ii)	Bar for 'time to read' in village with library = 31 1 mark	**1**
2(e)(iii)	Hypothesis is true – 1 mark reserve (✓HA) People read more regularly in the village with a library; OR More people read regularly/occasionally in village with a library; People read regularly in the village with library but read rarely/never in village without library; More people never/rarely read in village without library; More people have time to read (in the village with a library); OR More people are interested in reading (in the village with a library); OR More people have learned how to read (in the village with a library); OR More people say it is difficult to get books in village without a library; NOTE credit higher as more people. Need comparison. Credit 1 mark maximum (reserve) for paired data e.g. 36 people/% read regularly in village with library and 19 people/% read regularly in village without library; 36 people/% read regularly in village with library and 34 people/% never read in village without library; 31 people/% have time to read in village with library and 25 people/% have time to read in village without library; 52 people/% have difficulty getting books in village without library and 13 people/% have difficulty in village with library; Hypothesis is false/partly true = XHA. Credit relevant evidence which supports the correct conclusion of true. If no hypothesis conclusion ^HA and credit evidence which supports the correct conclusion of true. 1(HA +2(S) + 1(D) marks	**4**

Question	Answer	Marks
2(f)	Ideas such as: Number of years in (full-time) education/how early they start school/when they leave school/whether people go to school/taught to read at young age; Class size/pupil teacher ratio/number of schools/availability of schools/number of qualified teachers/quality of teachers/quality of education; Availability of free education/many families cannot afford fees for secondary education/Government/authority spending on schools/resources; Availability of books or bookshop/availability of internet; Girls less likely be educated than boys/less education for girls/girls less likely to go to school/girls drop out of school because of pregnancy; Need for children to work/earn money/look after siblings; Access to/availability of/lack of education; Poor health/war/poverty stops children going to school/prevents children's education; 3 @ 1 mark	**3**
2(g)	Ideas such as: Students/pair/group go to each village(s)/do survey in both village(s); Devise a hypothesis or example of hypothesis; Decide on categories of shops and services; Count/tally/record number of types of shops and services in the two villages; Get a map/draw a sketch map of villages; Plot/mark shops and services on map/put results on recording sheet; Identifying/classify different types/order of shops and services in the villages; Take photographs to compare village shops and services; 4 @ 1 mark	**4**

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